

# HIS LIFE LITERALLY HANGS BY A HAIR.

EXPERIMENTS WITH HUMAN HAIR ON BLOTTING PAPER WITH A 30 CALIBRE REVOLVER AT "CONTACT" AND AT VARIOUS DISTANCES.



SCIENTIFIC experiment is to take precedence now of the testimony of living witnesses.

What science declares that a pistol bullet will do when fired into a human head at certain distances and from certain weapons is henceforth to have—maybe—more weight in the minds of a jury in trial for murder than individual evidence of alibi.

Written confession of suicide by shooting even will be of no moment in the trials of the future. If the hair upon the dead wretch's head, or the skin, or the clothing at the spot where the bullet has entered, be not so burned and powder spotted as scientific men shall have decided that they should be.

The wonderful results of the recent experiments with pistol projectiles bearing upon this point tell plainly enough that many a man has gone to the gallows, convicted of taking life, when the supposed victim was in fact self-slaughtered.

So, on the other hand, careful adjustment of the pistol, the clothing and the other surroundings of a murdered person has enabled a murderer to go scot free, and left the police authorities, Coroner and the rest of the world to believe that death was suicidal.

Science has changed all that.

Wearing the weary time away in a cell of the State Prison at Auburn is a man whose life hangs literally upon a hair. And the conclusion of medico-legal science as to whether that hair was burned by powder from the cartridge which ended a woman's life, or by the hot irons with which she had curled her hair, will condemn him or set him free.

Already under conviction, Frank Sheldon is awaiting another trial upon appeal—a trial in which, as in no other, even of recent years, the findings of science will be paramount.

The crime for which Sheldon occupies a cell among the condemned is the murder of his wife, Eva Remington Sheldon, at Brutus, Cayuga County, on April 30, 1894. A little after 11 o'clock on that day her dead body was found. It was Sheldon who found it. The woman had been shot in the head and it was at first supposed she had killed herself. The last person who saw her alive was Sheldon.

Then the rumors began to tell that Sheldon and his wife had not lived happily together for several years. From that it was but a step to a murder theory. The authorities had Mrs. Sheldon's body examined and closely examined. The Coroner's jury found a verdict that the woman had died from a pistol shot fired by persons unknown. Two weeks later Sheldon was arrested. His trial lasted seven weeks. The defence was an alibi. It was shown that Sheldon was at Jordan, eight miles away, between 10 and 11 o'clock on the morning of the crime.

A vast amount of expert testimony was given relative to bullet wounds, and it was held that the woman shot herself the evidence of what science calls a "contact shot" would have been more conclusive than that shown at the post-mortem examination of the head of Mrs. Sheldon. And so, after six hours' deliberation, the jury found against him—murder in the first degree.

The case of Sheldon will be famous in legal annals for the reason that it marks the climax of disagreement among learned doctors and the beginning of experiments so extensive as to furnish positive knowledge by which murder may be known from suicide without the witness of human eyes. The nature of the killing will be written by the weapon on the body of the dead, and a river of waters will not wash out the story.

The prosecution's experts attempted to prove that Mrs. Sheldon could not have killed herself. If not, then the deed was Sheldon's. He was the last person seen with her before her death.

Prior to the trial and while it was in progress, experiments were made at the Syracuse Medical College in the effort to establish the prosecution's theory. Bullets were fired into cadavers from all distances and all directions, and it was upon the results of those experiments that Sheldon was convicted.

After the trial was ended further tests were made by William B. Chisholm, of Auburn, who had been a studious listener at the trial. Last week, at the June meeting of the Medico-Legal Society, of New York, at the Hotel Marlborough, Mr. Chisholm presented a paper upon "The Case of Sheldon—The Theory of Contact Shots."

The experiments upon dead bodies in Syracuse, Mr. Chisholm said, had been specially intended to illustrate the amount of resistance offered by human hair to the impingement of a bullet. Dr. Hall, of Fair Haven, Cayuga County, one of the chief expert witnesses at the trial, and a firm believer in Sheldon's innocence, contends that the whole question depends upon the extent of singeing shown by the hair about the wound, and that all other evidence is of minor consequence.

Now, the whole question concerning the manner of Mrs. Sheldon's death hinged upon whether a certain wisp of hair, close to the bullet wound, had been singed by the pistol shot or by the curling irons.

In referring to the appearance of Mrs. Sheldon's head, Dr. Benedict, of Weedsport, the Coroner, said:

"The next thing I noticed was a lock of hair over the right ear, covering an area as large as your thumb, which stood out in a fluffy condition, not matted together—very loose. That lock of hair appeared singed."

Being asked what effect washing would have on singed hair, he said it would remove the evidences of singeing. Asked if

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Internal treatment reduce the swelling in a few hours.

A case of ordinary poisoning of the severity indicated by the enlarged parts would not so easily succumb, but would require a systematic treatment of long duration. In the cases in hand a lasting cure is only a matter of a few hours.

The closest interrogation of victims has failed to disclose the cause of the peculiar affliction. All give the same explanation. They sleep with little or no covering and awake in the morning with discolored and swollen faces and arms.

One physician discovered that among his applicants for relief a large percentage sleep with their mouths open. These admitted that the parts first affected were the lips, and the swelling and irritation spread over the face from the region of the mouth. The theory deduced is the bug is peculiarly partial to parted lips.

Drs. Newcomb and Jordan, two well-known physicians, of St. Louis, have been examining the wounds of patients with a view to identifying the insect, but have so far failed to do so. Expert entomologists have also been called in for the same purpose.

But little progress has been made along this line owing to the lack of anything like an intelligent description of the offender. One patient, however, said that on arising in the morning, after being bitten, he brushed from his arm a peculiar long-legged bug, with short wings attached to the forward part of its body.



this hair had been washed, he said no.

Dr. Benedict was cross-examined by Mr. Drummond, counsel for the defence, and said: "That lock of hair did not have the appearance of having been washed, because there was too much evidence of the singeing in that lock."

Dr. Hall made many experimental shots at pieces of white blotting paper, preserving each piece as a record of the results of a shot at a certain distance.

He found that the powder and smoke made stains about three inches in diameter and powder grains penetrated the paper immediately about the hole. As the distance increased the area of powder stains was smaller and of powder grains larger.

In experiments with human hair against the blotting paper at one-half inch there was no singeing of the card. At firm contact there was staining of the paper by smoke, but no powder grains shown; at one-half inch with the hair evenly laid and nicely combed there was little smoke stain and no powder penetration either partial or complete. At contact the hair was visibly thinned for an inch or more in diameter and singed so as to fall off when combed; at one and a half inches the area of singeing was somewhat increased, and at two or three inches it was more superficial. The hair was held firmly to the card by rubber bands.

Dr. Hall and Mr. Chisholm tried shooting at a tuft of hair which was pinned to the side of a building. A pistol of the Sheldon pattern was used. Its calibre was .30. The cartridges were the "Union Metallic," containing 4-10 grain of fulminate and 60 grains of lead. From a distance of 28 inches it was found powder struck the hair at every shot, but there was no sign of singeing. In subsequent shots, at closer range, no singeing was observed until five inches was reached.

Then for the first time there were seen faint traces of a burn; also at four inches. It was very slight at three and two inches.

At one and a half it increased. There was no stain of powder on the board where it was covered with hair, but around it the board was covered with smoke and imbedded powder grains.

The bullet dragged the hair into the holes, filling them so tightly that in some instances it had to be cut out. Where the hair passed through the lock of hair the space immediately about the hole was entirely free from powder marks.

These experiments make it clear that it is extremely difficult to singe human hair, except at the closest range. At the second autopsy on Mrs. Sheldon's body it was found that the hair was perfectly clean at the spot where the bullet entered. "At no place," says the testimony, "was the hair burned except at a spot directly over the hole and a little in front." Here the scalp was clean. There was no trace of powder stain or marks. The ear was perfectly clean, except at one spot, which was almost black. This spot extended along the top of the ear. Upon the ear were no evidences of powder staining, grains or smoke. The whole face was perfectly clean. There was no evidence of powder or fired powder. The spot over the hole was the only place where there was evidence of burned hair.

Other experiments were made upon cadavers at Bellevue Hospital, in this city, in the presence of Drs. Cravelling, Foreman and Tripp, of Auburn, and experts for the State. In one case where the pistol was held against the head, the hair was blown in every direction from the wound, and hair and skin were covered with a thick deposit of smoke. With the pistol held half an inch away the hair was burned off over a diameter of an inch and a half.

In their evidence these experts generally agreed that a pistol could not have been held by a woman of Mrs. Sheldon's size behind her ear at over six and a half or seven inches distance. Dr. Tripp, a surgeon, formerly in the regular army, who had examined the body of Mrs. Sheldon when it was exhumed in the cemetery at Weedsport, said there was little difference between a contact shot and one at four inches except that the powder spread more. Grains would be imbedded in the skin at thirty inches; at seven inches the skin was thickly covered with grains of powder. At twenty inches the grains would enter the skin and cover a foot of surface; unburned powder grains could be washed off, but burned grains could not be removed.

Dr. Cravelling, one of the State examiners of the New York Medical Society, said that none of the conditions found in experiments at Bellevue Hospital of shots up to thirty inches existed in Mrs. Sheldon's case. At forty-two inches no powder entered the skin, but a few grains lodged on the skin.

And it is upon the outcome of all these fine experiments that Sheldon's destiny hangs. The effort of the defence will be of course to show the difficulty of singeing hair at a distance greater than that at which Mrs. Sheldon might have held the pistol; to force a conclusion that the hair was singed not by the overheated curling tongs, but by the pistol shot; that she killed herself.

The life of Sheldon, and the life of many a one to come after him, are at science's mercy. If its findings are in his favor, the fact that he had led a foul life; that he had for years fought and bickered with his wife and lavished his devotion openly upon another woman; that his alibi was shaky; that he was seen with the unfortunate woman last of all persons before he himself found her dead—all these things which in old-fashioned murder trials were of great pith and moment, will become as naught.

## A NEW BUG OF BAD HABITS.

A new bug of ferocious habits and mysterious origin has made its appearance in St. Louis.

It comes in the night, and bites its victims generally in the region of the mouth. No man, woman or child has yet been able to secure a specimen of this common disturber of the peace.

During the last week numerous calls have come to physicians from patients suffering from abnormal swelling of the lips, face and arms. In every instance the symptoms have been practically the same. The lips are puffed, the jaws are correspondingly enlarged and the patient complains of sharp, shooting pains, extending from the region of the eyes up over the forehead and head. The eyes are generally bloodshot, the mouth is parched and dry, and every indication of a serious poisoning is present. In a few instances the arms and hands have swollen in places.

It puzzles the medical men most is the way with which the evil is cured. An application of warm cloths and a simple

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Tragedy:



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Which  
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Hair,  
Pistol or  
Curling  
Tongs?

## USED RATS IN THE PULPIT

The Rev. Harlan G. Mendenhall, of Kansas City, Kan., is a temperance advocate who believes in strong object lessons. Mr. Mendenhall is the pastor of the First Presbyterian Church in the city where he lives. His congregation embraces some of the most staid and dignified citizens of the town. The other Sunday morning these good people were very much amazed on entering the church to see a small portion of the room partitioned off and the words "Sample Room" in red letters over the door. Around the interior of the place were several beer bottles, beer glasses, packages of cigarettes and a box of cigars.

So strange was this sight that men and women crowded about the "Sample Room" to get a clearer view of the wet goods. The church buzzed with the excited whispers of the congregation when Mr. Mendenhall stepped from his private study near the pulpit with several rats in a cage. On the floor behind the pulpit lay two dead

rodents. The congregation was more mystified than ever, and some of the small boys could not be restrained from laughing aloud. Two of the young women who sing in the choir screamed and attempted to jump up on the chairs. At this move the pastor assured the young women that the rats would remain in the cage and quiet once more prevailed.

Then Mr. Mendenhall made clear the object of his "Sample Room," and the presence of the rats, living and dead. He preached on the evils of drinking. The "Sample Room," he said, was a trap to catch men and boys. The beer, cigars and cigarettes were the bait to this horrible trap. He then explained how the rats would go into a cage and be caught just by placing a tempting bait for them. The dead animals were used to illustrate what her of the young gentlemen in the congregation who had arranged for a quiet drink took soda instead. The elderly people voted Mr. Mendenhall a most valuable temperance advocate. What became of the bottles of beer and the cigars and cigarettes used to point the moral is not recorded.

up the practice it will catch you eventually."

The sermon, with its striking object lesson, the second or third time, but if you keep sons, was a tremendous success. A number of who enter these traps for catching "It may not catch you the first time, or been caught. "An untimely death awaits always was the result after the rat had men," declared the dominie.